

**Amendments to the Claims:**

Please amend Claims 16, 20-24, and 27 and add new Claims 33-52, as follows.

Claims 1-15 (Canceled)

16. (Currently Amended) A method of stimulating the immune system of a human to produce an HIV-1 immune response, comprising administering to the human the combination of a pharmaceutical composition comprising:

a) at least one peptide that comprises at least nine consecutive amino acid residues of the sequence Xaa<sub>1</sub> Xaa<sub>2</sub> Xaa<sub>3</sub> Xaa<sub>4</sub> Xaa<sub>5</sub> Xaa<sub>6</sub> Ala Xaa<sub>8</sub> Xaa<sub>9</sub> Gln Thr Pro Trp Xaa<sub>14</sub> Xaa<sub>15</sub> Xaa<sub>16</sub> Xaa<sub>17</sub> Xaa<sub>18</sub> Val Xaa<sub>20</sub> (SEQ ID NO. 1),

wherein Xaa in position 1 is Lys or Arg,

Xaa in position 2 is Ala, Gly, Ser or Arg,

Xaa in position 3 is Leu or Met,

Xaa in position 4 is Gly or Arg,

Xaa in position 5 is Pro, Thr, Val, Ser, Gln or Ala,

Xaa in position 6 is Gly, Ala, Lys, Arg, Gln or Glu,

Xaa in position 8 is Thr or Ser,

Xaa in position 9 is Leu or Ile,

Xaa in position 14 is Thr, Ser or Val,

Xaa in position 15 is Ala or Ser,

Xaa in position 16 is Cys or Ser,



Xaa in position 17 is Gln or Leu,

Xaa in position 18 is Gly, Glu or Arg, and

Xaa in position 20 is Gly or Arg;

b) at least one peptide that comprises at least six consecutive amino acid residues of the sequence Xaa<sub>1</sub> Xaa<sub>2</sub> Xaa<sub>3</sub> Xaa<sub>4</sub> Xaa<sub>5</sub> Gly Leu Asn Pro Leu Val [Gly]<sub>n</sub> Xaa<sub>12</sub> Xaa<sub>13</sub> Tyr Xaa<sub>15</sub> Pro Xaa<sub>17</sub> Xaa<sub>18</sub> Ile Leu Xaa<sub>21</sub> Xaa<sub>22</sub> (SEQ ID NO. 4),

wherein Xaa in position 1 is Arg, Lys, Asp or none,

Xaa in position 2 is Trp, Gly, Lys or Arg,

Xaa in position 3 is Ile, Leu, Val or Met,

Xaa in position 4 is Ile, Val or Leu,

Xaa in position 5 is Leu, Met, Val or Pro,

Xaa in position 12 is Arg or Lys,

Xaa in position 13 is Met or Leu,

Xaa in position 15 is Ser, Cys or Gln,

Xaa in position 17 is Thr, Val, Ile, Ser or Ala,

Xaa in position 18 is Ser, Gly or Thr,

Xaa in position 21 is Asp, Glu, Cys or Gly, and

Xaa in position 22 is Gly or none,

and wherein n = 0, 1, 2 or 3;

c) at least one peptide that comprises at least six consecutive amino acid residues of the sequence Xaa<sub>1</sub> Xaa<sub>2</sub> Xaa<sub>3</sub> Pro Ile Pro Xaa<sub>7</sub> Xaa<sub>8</sub> Xaa<sub>9</sub> Xaa<sub>10</sub> Xaa<sub>11</sub> Xaa<sub>12</sub> [Gly]<sub>n</sub> Xaa<sub>13</sub> Xaa<sub>14</sub> Xaa<sub>15</sub> Xaa<sub>16</sub> Xaa<sub>17</sub> Xaa<sub>18</sub> Xaa<sub>19</sub> Xaa<sub>20</sub> Xaa<sub>21</sub> Xaa<sub>22</sub> Xaa<sub>23</sub> Xaa<sub>24</sub> (SEQ ID NO. 9),



wherein Xaa in position 1 is Asn, Ser, Gly, His, Ala, Pro, Arg or none,

Xaa in position 2 is Asn, Ala or Lys,

Xaa in position 3 is Pro, Gln, Gly, Ile or Leu,

Xaa in position 7 is Val or Ala,

Xaa in position 8 is Gly or Lys,

Xaa in position 9 is Glu, Asp, Lys, Phe or Thr,

Xaa in position 10 is Ile, Met, Val or Leu,

Xaa in position 11 is Tyr, Leu or none,

Xaa in position 12 is Ser or none,

Xaa in position 13 is Arg or none,

Xaa in position 14 is Asp, Arg, Trp, Ala or none,

Xaa in position 15 is Ile or none,

Xaa in position 16 is Tyr or none,

Xaa in position 17 is Lys or Arg,

Xaa in position 18 is Arg, Lys or Asp,

Xaa in position 19 is Trp or Gly,

Xaa in position 20 is Ile, Met, Val, Gln or Ala,

Xaa in position 21 is Ile, Val or Ala,

Xaa in position 22 is Leu, Met or Val,

Xaa in position 23 is Gly or Cys, and

Xaa in position 24 is Leu or none, and

wherein n = 1, 2 or 3; and



d) at least one peptide that comprises at least six consecutive amino acid residues of the sequence Xaa<sub>1</sub> Xaa<sub>2</sub> Ile Ile Xaa<sub>5</sub> Xaa<sub>6</sub> Xaa<sub>7</sub> Xaa<sub>8</sub> Xaa<sub>9</sub> Leu Xaa<sub>11</sub> [Gly]<sub>n</sub> [Arg]<sub>m</sub> Xaa<sub>12</sub> Xaa<sub>13</sub> Xaa<sub>14</sub> Xaa<sub>15</sub> Xaa<sub>16</sub> Xaa<sub>17</sub> Xaa<sub>18</sub> Xaa<sub>19</sub> Xaa<sub>20</sub> Xaa<sub>21</sub> Xaa<sub>22</sub> Xaa<sub>23</sub> Xaa<sub>24</sub> Xaa<sub>25</sub> (SEQ ID NO. 15)

wherein Xaa in position 1 is Pro, Lys, Arg or none,

Xaa in position 2 is Glu, Arg, Phe or Lys,

Xaa in position 5 is Pro or Thr,

Xaa in position 6 is Met, Thr or Nle,

Xaa in position 7 is Phe or Leu,

Xaa in position 8 is Ser, Thr, Ala or Met,

Xaa in position 9 is Ala, Glu or Leu,

Xaa in position 11 is Ser or none,

Xaa in position 12, is Ala, Arg or none,

Xaa in position 13 is Ile, Leu or none,

Xaa in position 14 is Ser, Ala, Leu or none,

Xaa in position 15 is Tyr, Glu or Asp,

Xaa in position 16 is Gly or Asp,

Xaa in position 17 is Ala or Leu,

Xaa in position 18 is Thr, Ile, Val, Leu or Asn,

Xaa in position 19 is Pro, Thr or Ser,

Xaa in position 20 is Tyr, Phe, Nle, His or Gln,

Xaa in position 21 is Asp, Asn, Leu or Ala,

Xaa in position 22 is Leu, Ile, Val or Asn,



Xaa in position 23 is Asn, Tyr, Cys or Gly,  
Xaa in position 24 is Thr, Met, Ile, Ala, Val or none, and  
Xaa in position 25 is Gly or none, and  
wherein  $n = 1, 2$  or  $3$ , and  $m = 0, 1, 2$  or  $3$ , and  
~~e) — a pharmaceutically acceptable diluent.~~

17. (Previously Presented) A method according to claim 16, wherein each of said peptides a, b, c, and d consists of up to 50 amino acid residues.

18. (Previously Presented) A method according to claim 16, wherein all of the amino acid residues of said peptides a, b, c, and d are in the L form.

19. (Previously Presented) A method according to claim 16, wherein at least two of said peptides a, b, c, and d are linked together through an inter- or intra-molecular bond that is a  $-S-(CH_2)_p-S-$  bridge or a  $-(CH_2)_p-$  bridge wherein  $p = 1-8$  optionally intervened by one or more heteroatoms selected from the group consisting of O, N and S.

20. (Currently Amended) A method according to claim 16, wherein the combination of peptides is administered with ~~pharmaceutical composition also contains~~ one or more cytokines.



21. (Currently Amended) A method according to ~~of~~ claim 16, wherein said peptides a, b, c, and d are administered while dissolved in saline water and are administered in combination with ~~the composition also contains~~ a granulocyte macrophage growth factor.

22. (Currently Amended) A method according to claim 16, wherein the combination of peptides is administered with ~~pharmaceutical composition comprises~~ an adjuvant selected from the group consisting of Monophosphoryl Lipid A, Freund's complete or incomplete adjuvant, and aluminum hydroxide.

23. (Currently Amended) A method according to claim 16, wherein the ratio of peptides a/b/c/d in the combination ~~pharmaceutical composition~~ is 1/1/1/1.

24. (Currently Amended) A method according to claim 16, wherein the combination of peptides ~~pharmaceutical composition~~ is administered in the form of a dosage unit that provides 1 µg to 1 mg of each of said peptides a, b, c, and d per kg of bodyweight of the human.

25. (Previously Presented) The method according to claim 24, wherein the administration of said dosage unit is performed at least three times.



26. (Previously Presented) The method according to claim 25, wherein said dosage unit provides 2 µg to 0.15 mg of each of said peptides a, b, c, and d per kg of bodyweight of the human.

27. (Currently Amended) A method according to claim 26, wherein the dosage unit ~~pharmaceutical composition~~ is in the form of a sterile sodium chloride solution and the administration is by injection.

28. (Previously Presented) A method according to any one of claims 16-27, wherein said peptide a is SEQ ID NO. 3.

29. (Previously Presented) A method according to any one of claims 16-27, wherein said peptide b is SEQ ID NO. 6.

30. (Previously Presented) A method according to any one of claims 16-27, wherein said peptide c is SEQ ID NO. 11.

31. (Previously Presented) A method according to any one of claims 16-27, wherein said peptide d is SEQ ID NO. 18.

32. (Previously Presented) A method according to any one of claims 16-27, wherein said peptide a is SEQ ID NO. 3, said peptide b is SEQ ID NO. 6, said peptide c is SEQ ID NO. 11, and said peptide d is SEQ ID No. 18.



33. (New) A method of stimulating the immune system of a human to produce an HIV-1 immune response, comprising administering to the human a pharmaceutical composition comprising at least one peptide that comprises the sequence Xaa<sub>1</sub> Xaa<sub>2</sub> Ile Ile Xaa<sub>5</sub> Xaa<sub>6</sub> Xaa<sub>7</sub> Xaa<sub>8</sub> Xaa<sub>9</sub> Leu Xaa<sub>11</sub> [Gly]<sub>n</sub> [Arg]<sub>m</sub> Xaa<sub>12</sub> Xaa<sub>13</sub> Xaa<sub>14</sub> Xaa<sub>15</sub> Xaa<sub>16</sub> Xaa<sub>17</sub> Xaa<sub>18</sub> Xaa<sub>19</sub> Xaa<sub>20</sub> Xaa<sub>21</sub> Xaa<sub>22</sub> Xaa<sub>23</sub> Xaa<sub>24</sub> Xaa<sub>25</sub> (SEQ ID NO. 15)

wherein Xaa in position 1 is Pro, Lys, Arg or none,

Xaa in position 2 is Glu, Arg, Phe or Lys,

Xaa in position 5 is Pro or Thr,

Xaa in position 6 is Met, Thr or Nle,

Xaa in position 7 is Phe or Leu,

Xaa in position 8 is Ser, Thr, Ala or Met,

Xaa in position 9 is Ala, Glu or Leu,

Xaa in position 11 is Ser or none,

Xaa in position 12, is Ala, Arg or none,

Xaa in position 13 is Ile, Leu or none,

Xaa in position 14 is Ser, Ala, Leu or none,

Xaa in position 15 is Tyr, Glu or Asp,

Xaa in position 16 is Gly or Asp,

Xaa in position 17 is Ala or Leu,

Xaa in position 18 is Thr, Ile, Val, Leu or Asn,

Xaa in position 19 is Pro, Thr or Ser,

Xaa in position 20 is Tyr, Phe, Nle, His or Gln,

Xaa in position 21 is Asp, Asn, Leu or Ala,



Xaa in position 22 is Leu, Ile, Val or Asn,

Xaa in position 23 is Asn, Tyr, Cys or Gly,

Xaa in position 24 is Thr, Met, Ile, Ala, Val or none, and

Xaa in position 25 is Gly or none, and

wherein  $n = 1, 2$  or  $3$ , and  $m = 0, 1, 2$  or  $3$ , and

a pharmaceutically acceptable diluent.

34. (New) The method according to claim 33, wherein said peptide consists of up to 50 amino acid residues.

35. (New) The method according to claim 34, wherein all of the amino acid residues of said peptide are in the L form.

36. (New) The method according to claim 34, wherein said peptide consists of up to 30 amino acid residues.

37. (New) The method according to claim 34, wherein the pharmaceutical composition is administered in conjunction with the administration of one or more cytokines.

38. (New) The method according to claim 34, wherein said peptide is dissolved in saline water and the pharmaceutical composition is administered in conjunction with a granulocyte macrophage growth factor.



39. (New) The method according to claim 34, wherein the pharmaceutical composition comprises an adjuvant selected from the group consisting of Monophosphoryl Lipid A, Freund's complete or incomplete adjuvant, and aluminum hydroxide.

40. (New) The method according to claim 34, wherein the pharmaceutical composition is administered in the form of a dosage unit that provides 1  $\mu$ g to 1 mg of said peptide per kg of bodyweight of the human.

41. (New) The method according to claim 40, wherein the administration of said dosage unit is performed at least three times.

42. (New) The method according to claim 41, wherein said dosage unit provides 2  $\mu$ g to 0.15 mg of said peptide per kg of bodyweight of the human.

43. (New) The method according to claim 42, wherein the pharmaceutical composition is in the form of a sterile sodium chloride solution and the administration is by injection.

44. (New) The method according to any one of claims 33 or 37-43, wherein said peptide consists of SEQ ID NO. 18.



45. (New) An isolated peptide that comprises the sequence Xaa<sub>1</sub> Xaa<sub>2</sub> Ile Ile Xaa<sub>5</sub> Xaa<sub>6</sub> Xaa<sub>7</sub> Xaa<sub>8</sub> Xaa<sub>9</sub> Leu Xaa<sub>11</sub> [Gly]<sub>n</sub> [Arg]<sub>m</sub> Xaa<sub>12</sub> Xaa<sub>13</sub> Xaa<sub>14</sub> Xaa<sub>15</sub> Xaa<sub>16</sub> Xaa<sub>17</sub> Xaa<sub>18</sub> Xaa<sub>19</sub> Xaa<sub>20</sub> Xaa<sub>21</sub> Xaa<sub>22</sub> Xaa<sub>23</sub> Xaa<sub>24</sub> Xaa<sub>25</sub> (SEQ ID NO. 15)

wherein Xaa in position 1 is Pro, Lys, Arg or none,

Xaa in position 2 is Glu, Arg, Phe or Lys,

Xaa in position 5 is Pro or Thr,

Xaa in position 6 is Met, Thr or Nle,

Xaa in position 7 is Phe or Leu,

Xaa in position 8 is Ser, Thr, Ala or Met,

Xaa in position 9 is Ala, Glu or Leu,

Xaa in position 11 is Ser or none,

Xaa in position 12, is Ala, Arg or none,

Xaa in position 13 is Ile, Leu or none,

Xaa in position 14 is Ser, Ala, Leu or none,

Xaa in position 15 is Tyr, Glu or Asp,

Xaa in position 16 is Gly or Asp,

Xaa in position 17 is Ala or Leu,

Xaa in position 18 is Thr, Ile, Val, Leu or Asn,

Xaa in position 19 is Pro, Thr or Ser,

Xaa in position 20 is Tyr, Phe, Nle, His or Gln,

Xaa in position 21 is Asp, Asn, Leu or Ala,

Xaa in position 22 is Leu, Ile, Val or Asn,

Xaa in position 23 is Asn, Tyr, Cys or Gly,



Xaa in position 24 is Thr, Met, Ile, Ala, Val or none, and

Xaa in position 25 is Gly or none, and

wherein  $n = 1, 2$  or  $3$ , and  $m = 0, 1, 2$  or  $3$ .

46. (New) The isolated peptide according to claim 45, wherein said peptide consists of up to 50 amino acid residues.

47. (New) The isolated peptide according to claim 46, wherein all of the amino acid residues of said peptide are in the L form.

48. (New) The isolated peptide according to claim 46, wherein said peptide consists of up to 30 amino acid residues.

49. (New) The peptide of claim 45, wherein the peptide consists of SEQ ID NO. 18.

50. (New) The peptide of claim 49, wherein the terminal ends of the peptide are selected from the group consisting of free carboxyl groups, amino groups, and amides.

51. (New) The peptide of claim 49, wherein the peptide is immobilized to a solid support.



52. (New) The peptide of claim 50, wherein the peptide is immobilized to a solid support.